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Claims

1. A process for the production of lupin extracts from lupins, comprising:
 - (a) extracting lupin meal or flour with water at alkaline pH;
 - (b) separating an alkali soluble lupin protein containing component from an alkali insoluble fibrous component;
 - (c) adjusting the pH of the protein component with acid to a pH between 3-5.0 to precipitate a food grade lupin protein extract (PF1), from an acid soluble lupin protein containing component, collecting said precipitated food grade lupin protein extract (PF1), adjusting the pH of the extract to pH 5-6.5 and thereafter drying the extract to give a proteinaceous extract (PF1); and optionally,
 - (d) dehydrating the acid soluble lupin protein containing component to give a second food grade lupin protein extract (PF3); or
 - (e) raising the pH of the acid soluble lupin protein component to pH 5-7, and optionally recovering a lupin protein isolate (PF2), followed by dehydrating the soluble lupin protein component to give a third food grade lupin protein fraction (PF3).
- 20 2. A process according to claim 1 wherein lupin meal or flour is mixed with water at a ratio of lupin flour or meal to water of 1:2-10 on a w/w basis.
3. A process according to claim 2 wherein lupin meal or flour is mixed with water at a ratio of lupin flour or meal to water of 1:4-8 on a w/w basis.
- 25 4. A process according to claim 1 wherein said lupin meal or flour is extracted with water at an alkaline pH of from about pH 7-pH 9.
5. A process according to claim 1 wherein the acid soluble lupin protein component of step (d) is dehydrated by precipitation with a C₁-C₆ food grade organic solvent and the precipitated lupin protein extract (PF3) recovered.

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6. A process according to claim 1 wherein the acid soluble lupin protein component of step (d) is dehydrated and purified by evaporation, distillation or filtration.

5 7. A process according to claim 1 wherein the acid soluble lupin protein component of step (e) is dehydrated by precipitation with a C₁-C₆ food grade organic solvent and the precipitated lupin protein extract (PF3) recovered.

10 8. A process according to claim 1 wherein the acid soluble lupin protein component of step (e) is dehydrated by evaporation, distillation or filtration.

9. A process according to claim 1, which comprises said process steps (a) through (c), (a) through (d), or (a) to (c) and (e).

15 10. A process according to claim 1 wherein said food grade organic solvent is selected from ethanol and propanol.

11. A process according to claim 1 wherein one or more lupin protein extracts PF1, PF2 and PF3 are recovered.

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12. A process according to claim 1 wherein a lupin protein isolate is recovered.

13. A process according to claim 1 which produces lupin protein extracts and isolate having an off white colour and neutral-taste.

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14. A process according to claim 1 for the production of a food grade lupin protein extract.

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15. A food product containing a lupin protein extract produced according to the process of claim 1.

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16. A food product according to claim 15 wherein said lupin protein is a replacement for dairy, egg, soy or meat protein in the food product.
17. A nutritional supplement containing a lupin protein extract produced according to the process of claim 1.
18. A nutritional supplement according to claim 17 containing lupin protein extract PF1, PF2 or PF3.
- 10 19. A paper coating composition containing a lupin protein extract produced according to the process of claim 1.
20. A paper coating according to claim 19 wherein said lupin protein extract is selected from PF1, PF2 and PF3.
- 15 21. A feed ingredient containing a lupin protein extract produced according to the process of claim 1.
22. A feed ingredient according to claim 21 wherein said lupin protein extract is selected from PF1, PF2 and PF3.
- 20 23. A food product containing a lupin protein isolate produced according to the process of claim 1.
- 25 24. A food product according to claim 19 wherein said lupin protein isolate is a replacement for dairy, egg, soy or meat protein in said food product.
25. A process according to claim 1 wherein said alkali insoluble fibrous component is recovered.

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26. A process according to claim 21 wherein said alkali insoluble fibrous component is washed in water and subsequently treated with acid and/or one or more enzymes to produce galactose.
- 5 27. A process for the production of lupin fibre extracts from lupins, comprising:
 - (a) extracting lupin meal or flour with water at alkaline pH;
 - (b) separating an alkali soluble lupin protein containing component from an alkali insoluble fibrous component; and
 - (c) mixing the fibrous component with water at pH 1-3, heating for 1-5 hours at 10 a temperature of 60°C-80°C, and thereafter separating an insoluble precipitate (FF1) from a hydrocolloid (SHF1).
28. A product according to claim 25, wherein the product is SHF1 or FF1.